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Telecommunications Equipment: Where To From Here?

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What The Telecom Equipment Industry Needs

- A stable regulatory environment
- A regulatory environment that fosters *healthy* competition
- A regulatory environment that promotes new investment
  - In building/upgrading access/edge facilities to provide advanced/high-speed service
  - In building automated next-generation networks that reduce carrier operating expenses and enable their ability to offer new, revenue-producing services

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The Telecom Industry Is In Trouble

Dramatic bandwidth
price declines

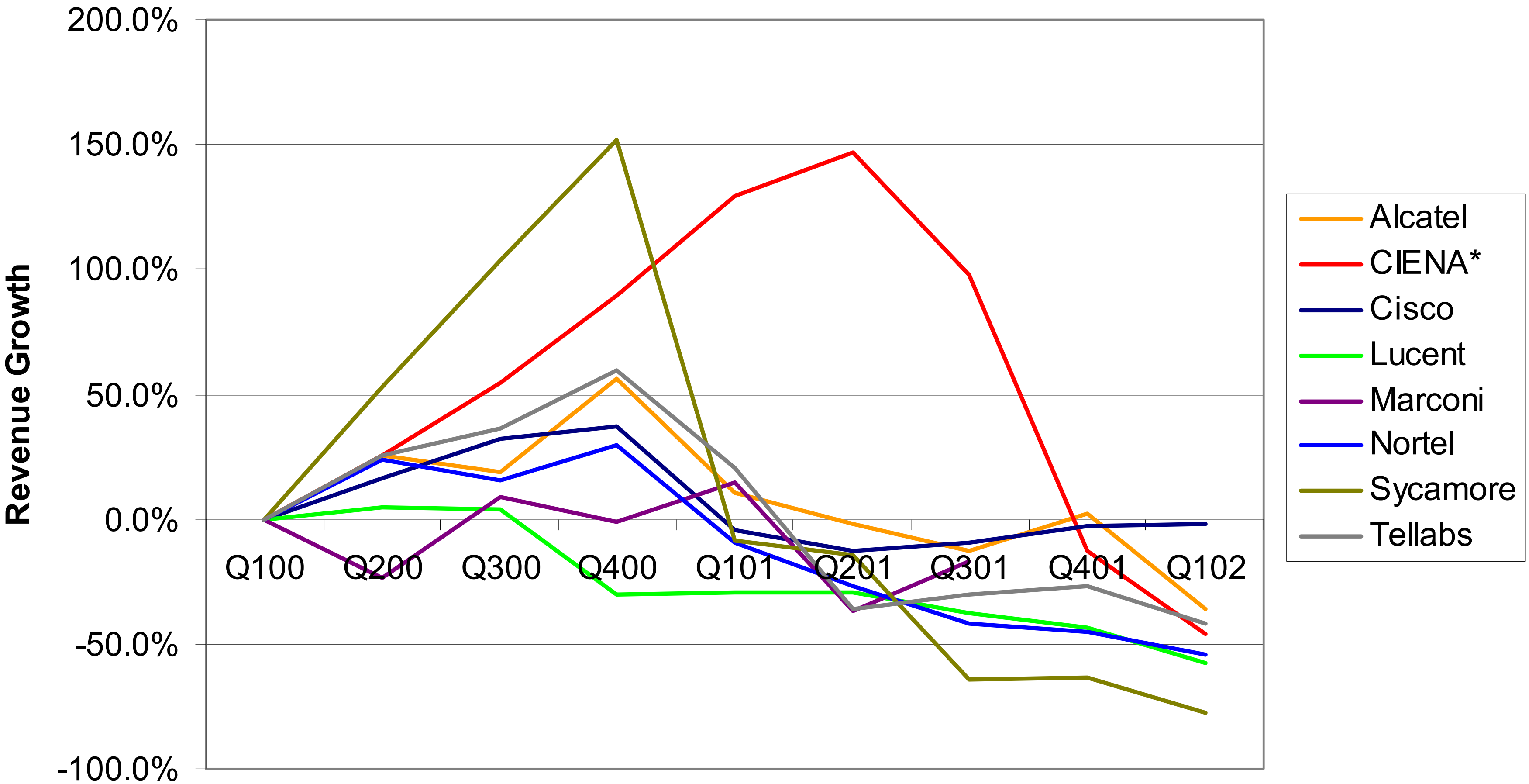
Debt explosion followed
by ~150 carrier defaults &
bankruptcies(~$230 Billion)

Total vendor & component
market cap lost since high
point > 93% ($2.7 Trillion)

Over 675k jobs lost

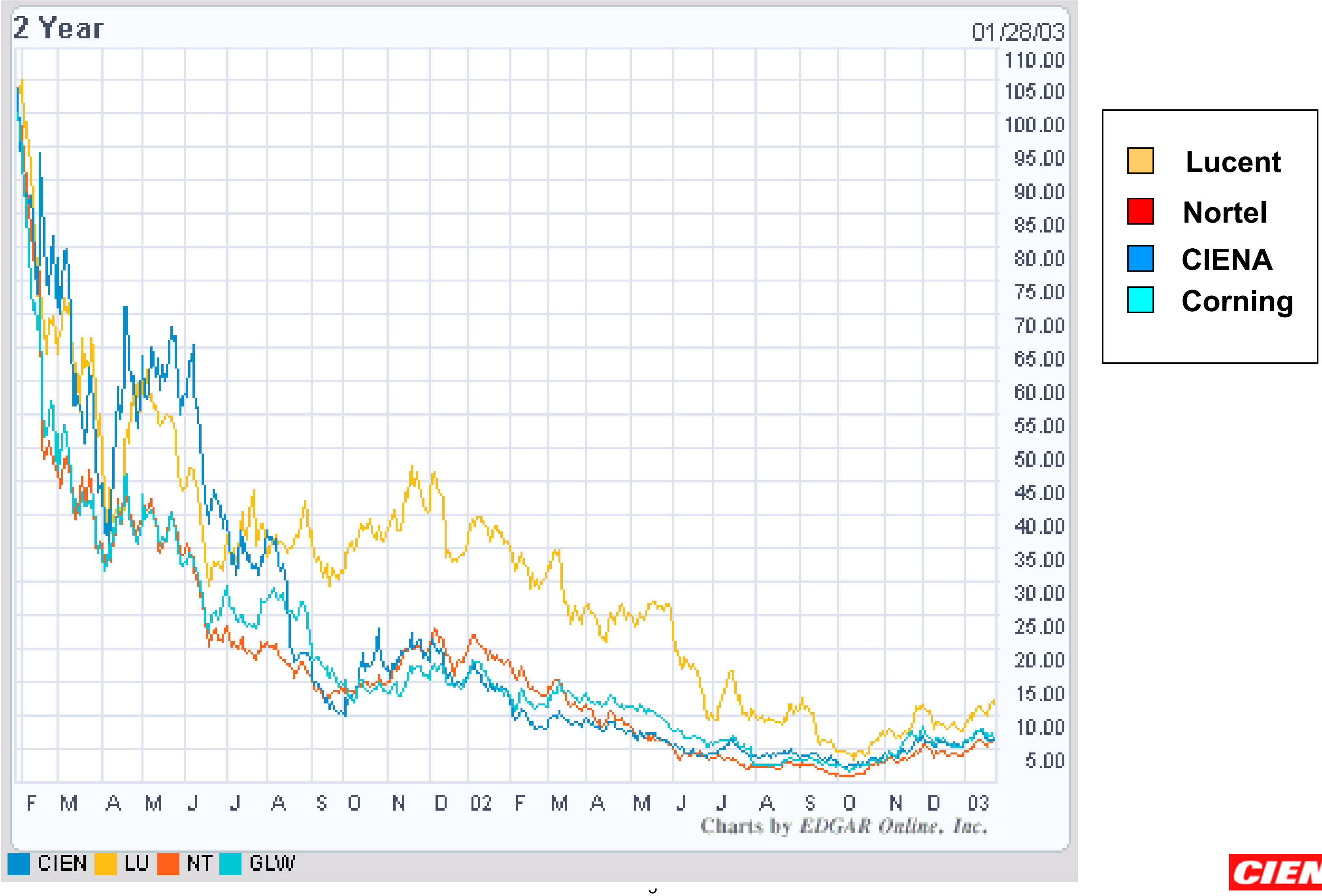
Vendor Revenue: Down

Between the beginning of 2000, and Q1 '02, revenues fell 40% and average GPM fell from 41% to 25.5%.



Source: Public filings

Vendor Stock Prices: Down



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Vendor Financial Flexibility: Limited

Four Representative NA Telecom Vendors

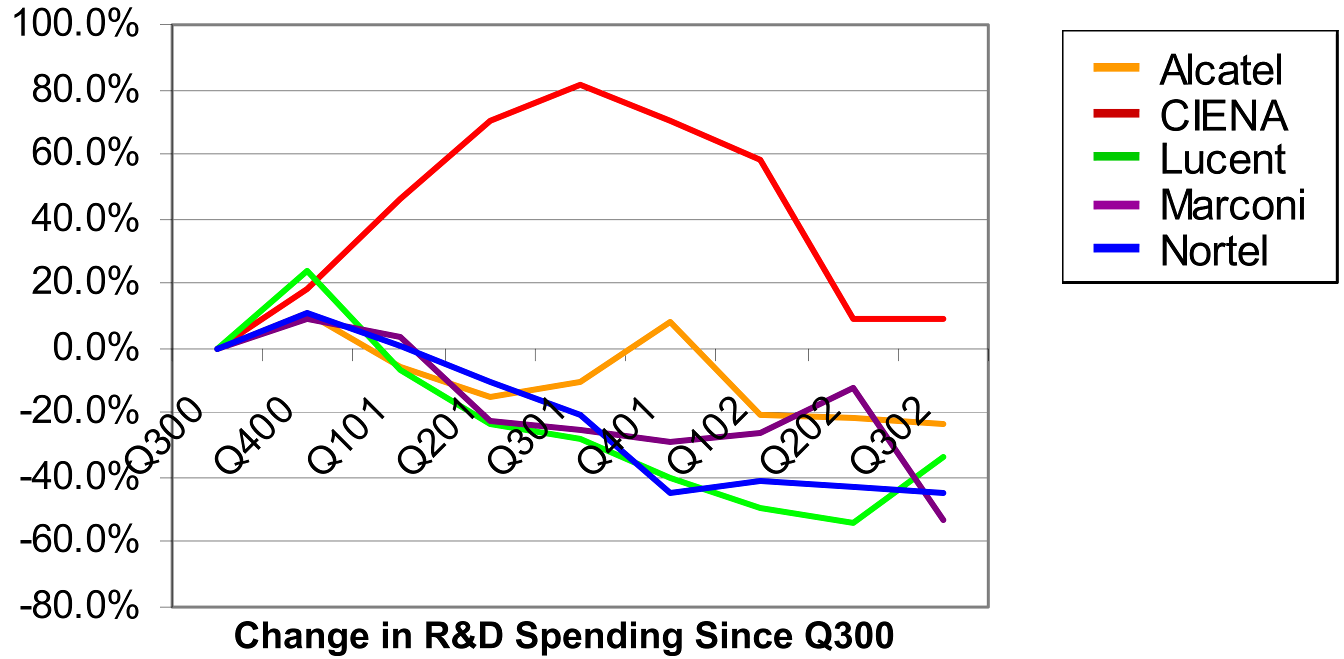
Rating	Issue As of 16 Oct 2002	Coupon	Maturity	Yield	Price (Par =100)
B2/B	Lucent Technologies	7.250	7-15-2006	37.029	42.125
Ba/B	Nortel Networks	6.125	2-15-2006	28.151	54.375
B1/B	CIENA	3.75	2-1-2008	13.494	64.063
Ba2/BB+	Corning	6.3	3-1-2009	19.396	53.250

Rating	Issue As of 20 Jan 2003	Coupon	Maturity	Yield	Price (Par =100)
B2/B	Lucent Technologies	7.250	7-15-2006	20.288	68.563
Ba/B	Nortel Networks	6.125	2-15-2006	15.596	77.625
B1/B	CIENA	3.75	2-1-2008	7.886	83.125
Ba2/BB+	Corning	6.3	3-1-2009	8.399	90.125

Source: www.bondpage.com

Major Telecom Vendors Are Spending 30%-60% Less Today On R&D Than They Did 2 Years Ago

Current reduction of R&D spending could result in decreased quality of service issues in the future.



Note: CIENA number includes ONI. CIENA and Marconi Q302 estimates, not actuals.

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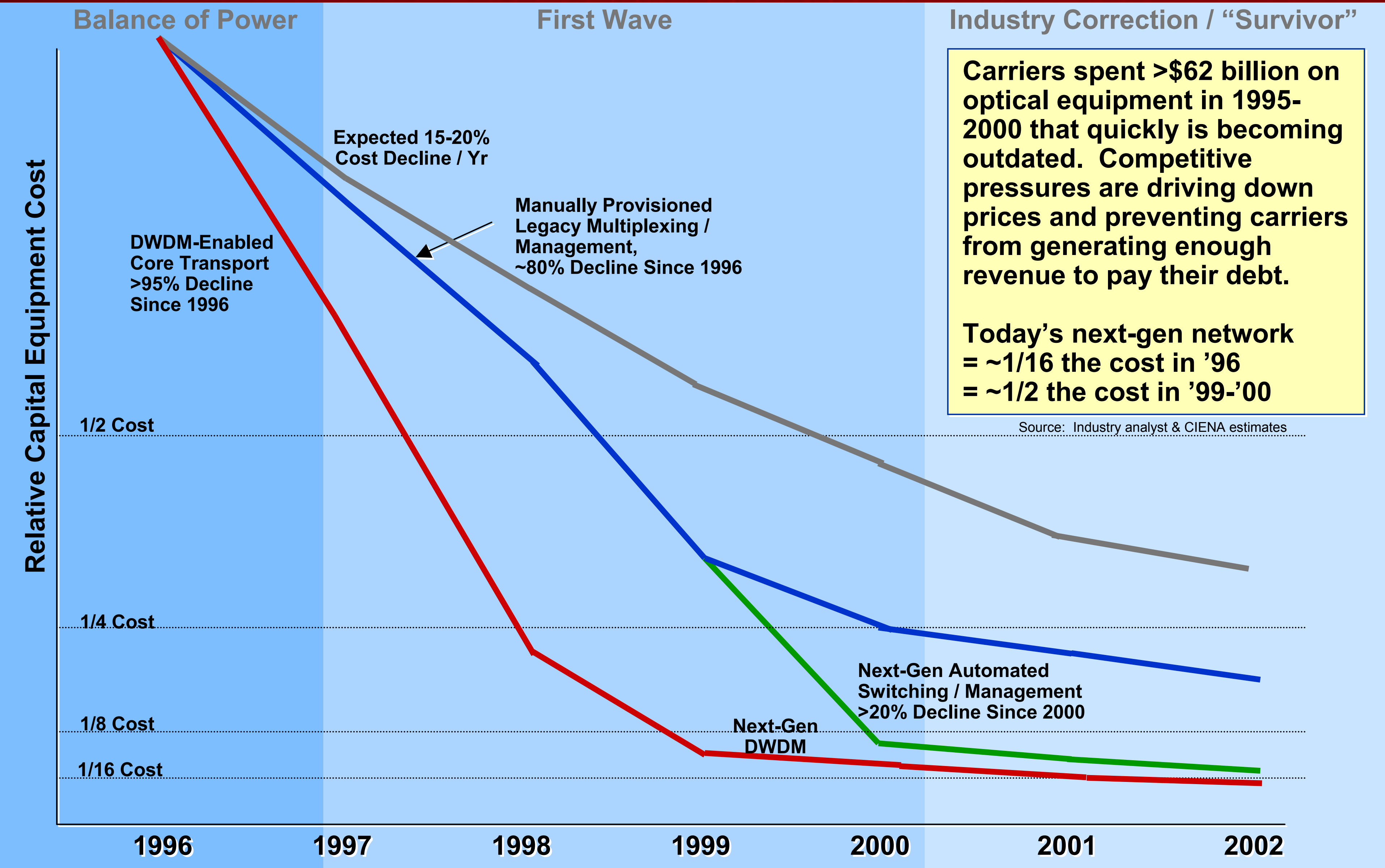
Telecom Capital Equipment Cost Decline



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Carriers Are Also Suffering

Carriers Are Caught In The Midst Of A Vicious Cycle

- Sustaining revenue growth
- Using capital efficiently
- Reducing operating costs
- More impatient stakeholders monitoring shorter term ratios

- Increased carrier and platform competition causing price erosion and/or market share loss
- Decreasing customer loyalty (churn)
- Increased need for differentiated and/or advanced services

- In-place legacy networks not capable of supporting consumer demand for broadband services
- Increased vendor risk

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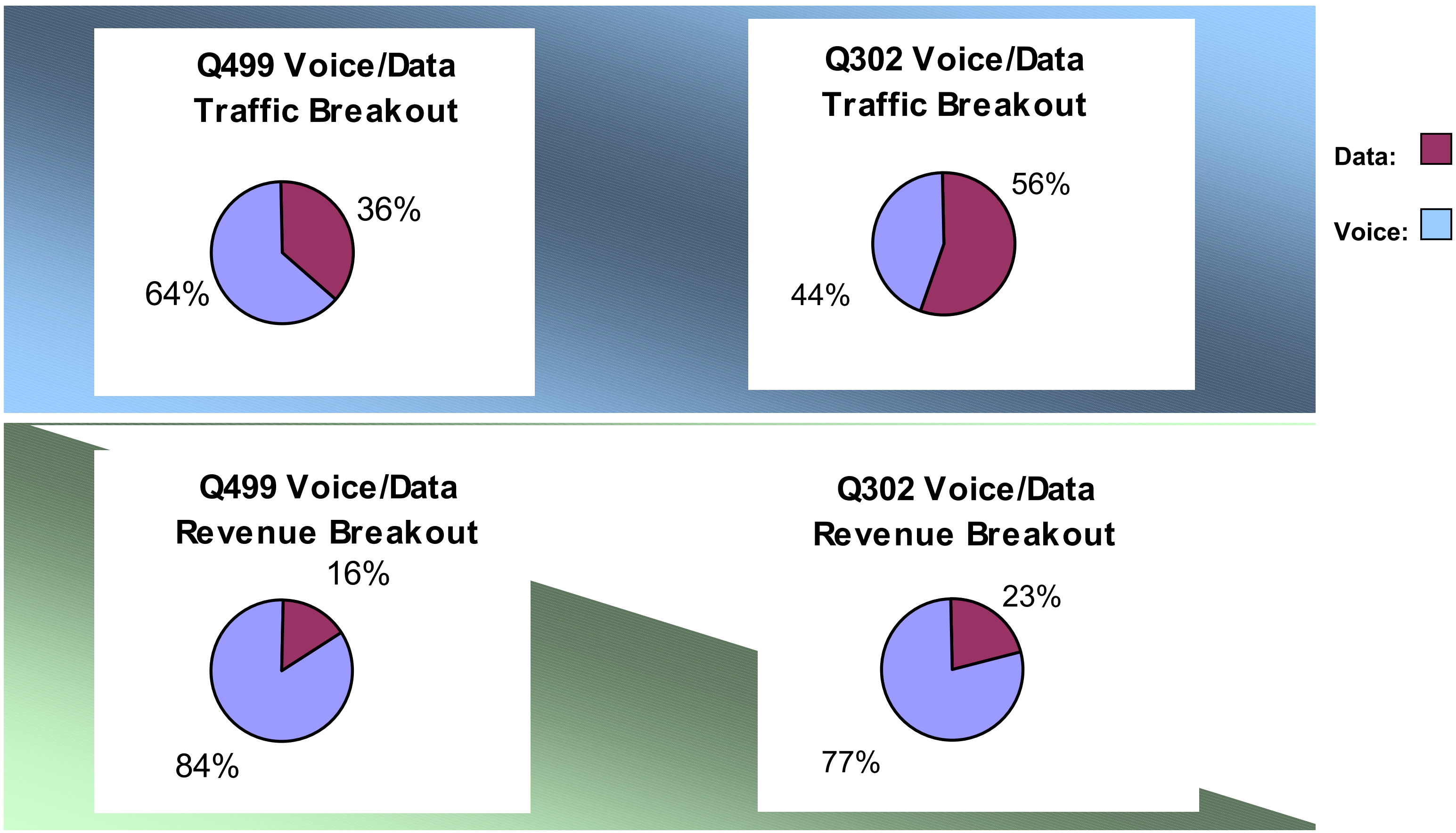
Carrier Business Models Are Under Severe Pressure

Data now accounts for 56% of ILEC landline traffic…
but only accounts for 23% of ILEC voice + data revenues.

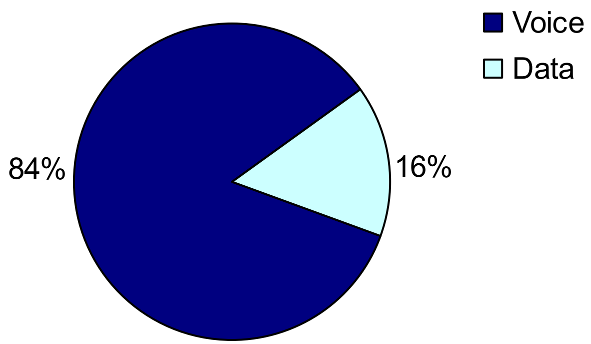


Source: Public filings.

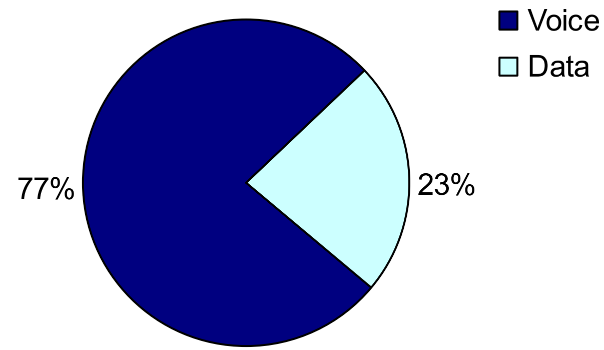
There Is A Growing Disconnect Between Data Traffic & Revenues

IDC estimates data will account for only 23% of global telecom revenues in 2005 but will account for 90% of global bandwidth end-user demand.

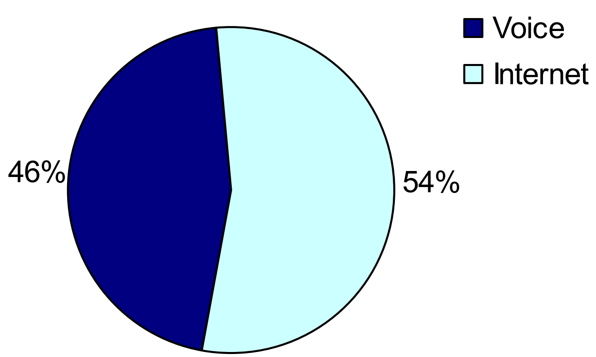
Global Telecom Service Revenue Breakdown, 2002



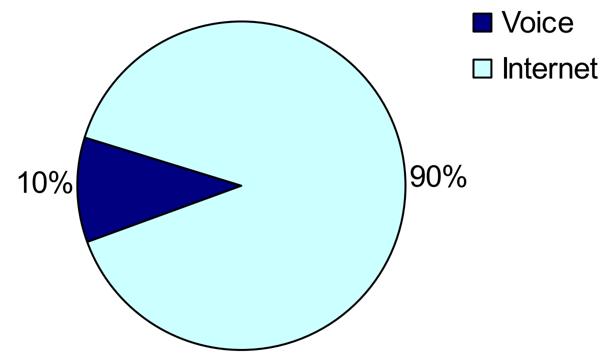
Global Telecom Service Revenue, 2005



Global Bandwidth End User Demand, 2002



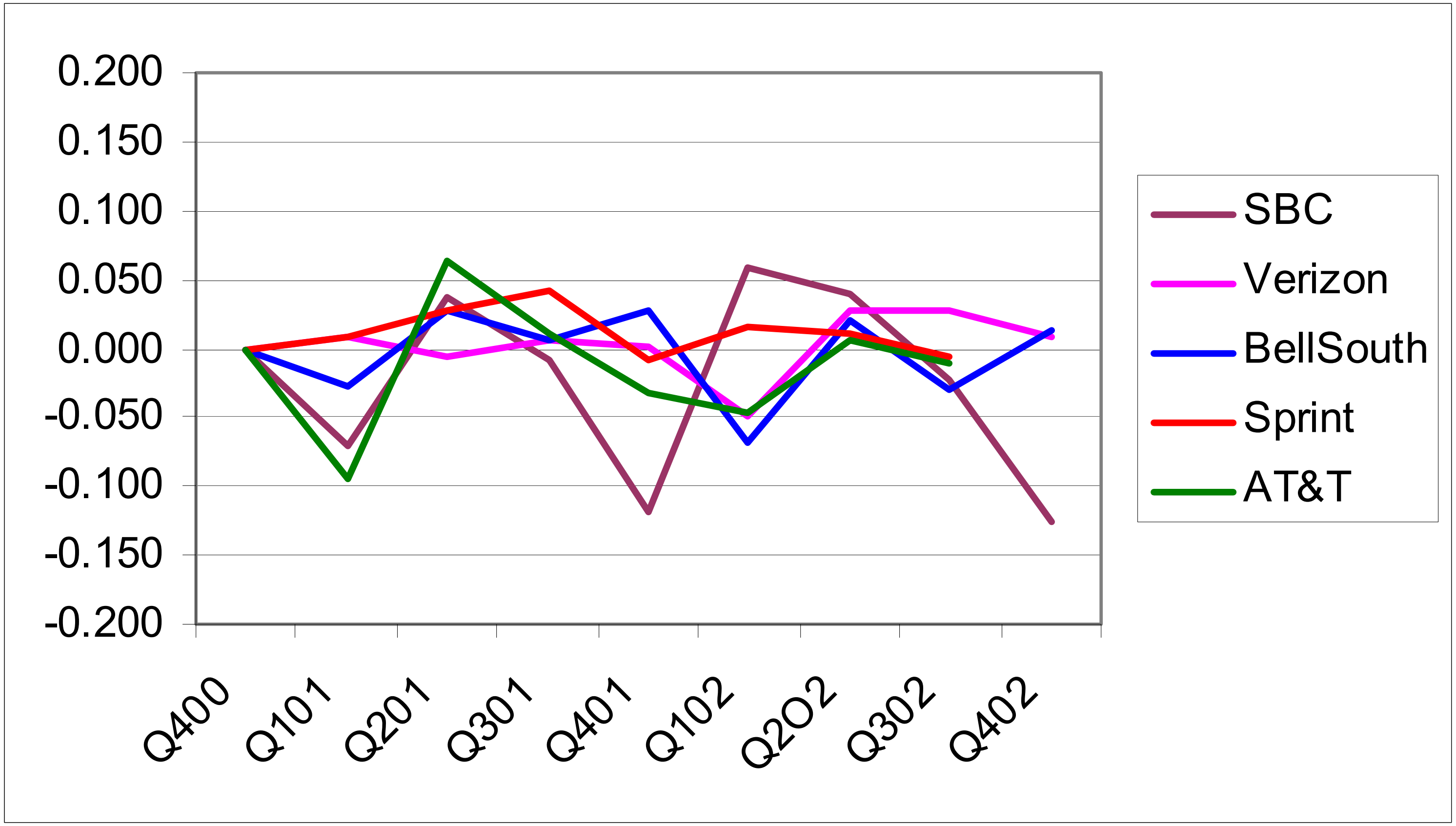
Global Bandwidth End User Demand, 2005



Source: IDC, 2002

Carrier Revenues: Down Or Flat

Using Q4 2000 as a base; carrier revenues have declined or remained relatively flat in the past two years



Source: Carrier filings; carrier web sites

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Carrier Stock Prices: Down

What Do Carriers Need To Do?

- Align revenue with traffic
- Reduce operating costs by automating core network operations
- Invest in building next-generation networks capable of delivering high-speed, advanced services to consumers

Next-Generation Networks Improve Carrier Economics

Cost of Acquisition

- Improve functionality
- Consolidate functionality
- Use fewer vendors

Cost of Operation

- Increase network automation
- Require fewer network elements
- Use less space and power
- Unify network management
- Use fewer vendors

Revenue

- Generate data revenue
- Improve bandwidth mgmnt
- Enable quality of service
- Create new services
- Provide broader range of services

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  - In building automated next-generation networks

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Thank You.